

# 1969

OPERATING  
SUMMARY

# MEAFORD

***water  
treatment  
plant***

MOE  
MEA  
ANMX

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ONTARIO WATER RESOURCES COMMISSION

Division of Plant Operations

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*Water management in Ontario*

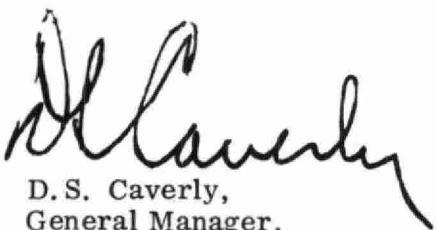
Ontario  
Water Resources  
Commission

135 St.Clair Ave.W.  
Toronto 195  
Ontario

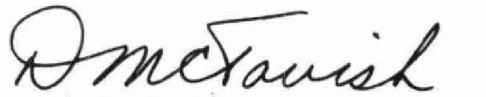
The operating efficiency and financial status of the water treatment facilities operated for you in 1969 are presented in the following pages.

The regional operations engineer's comments and the statistical data will assist you in gauging the plant's level of performance. A new flow chart and up-to-date design data are also provided.

Various divisions and sections within the Commission have co-operated in providing what we trust is an accurate and concise annual operating summary.



D.S. Caverly,  
General Manager.



D.A. McTavish, P. Eng.,  
Director,  
Division of Plant Operations.

anmx

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**MEAFORD**

**water treatment plant**

operated for

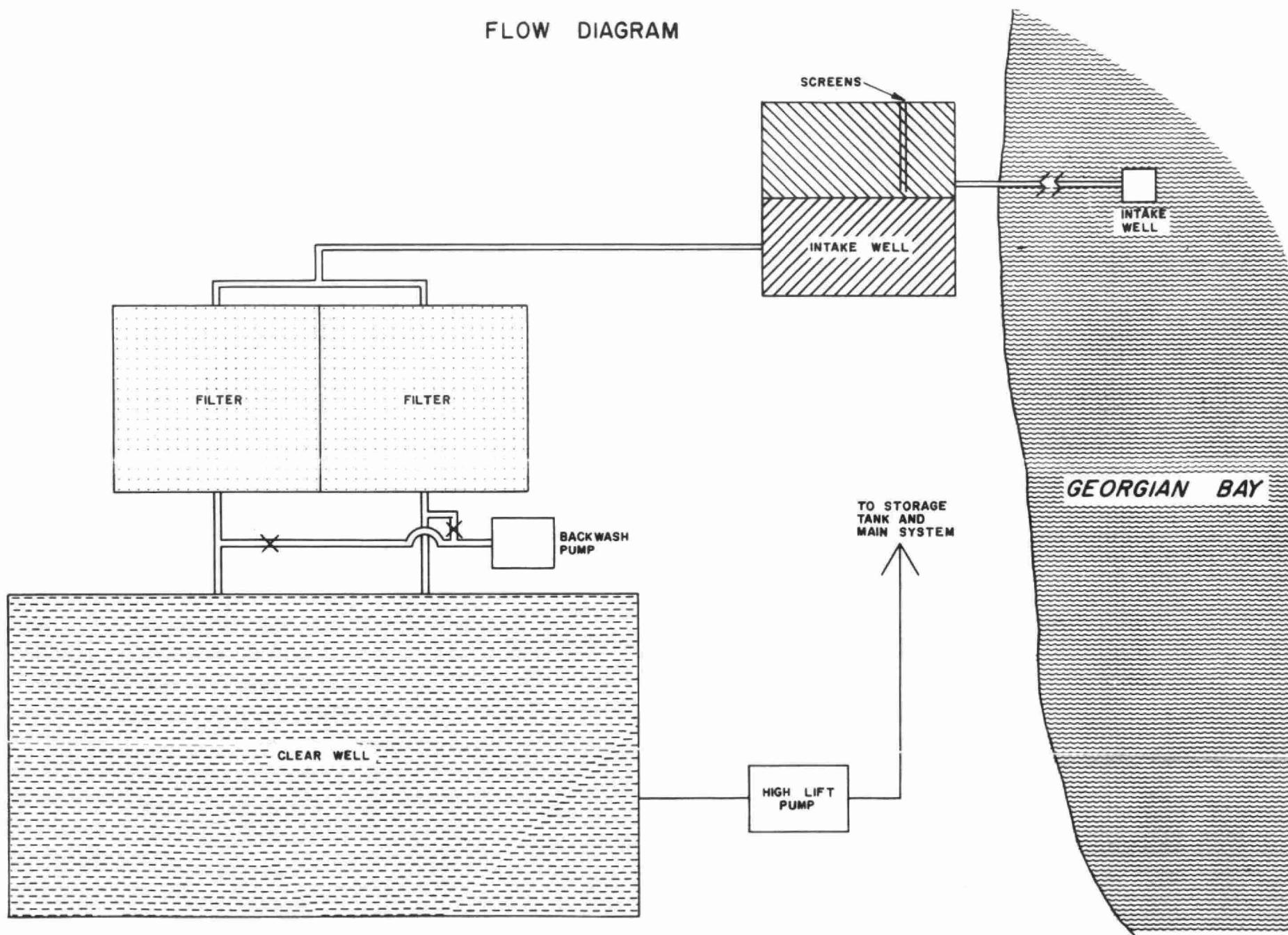
**THE TOWN OF MEAFORD**

by the

**ONTARIO WATER RESOURCES COMMISSION**

**1969 ANNUAL OPERATING SUMMARY**

## FLOW DIAGRAM



## DESIGN DATA

### NOMINAL CAPACITY

288,000 gpd

### RAW WATER SOURCE

Nottawasaga Bay

### INTAKE

- 877' of 30' pipe
- depth about 22 ft

### CAPACITY OF UNITS

Low Lift Pumps - Two 3.0 mgd  
@ 55' each

Filters - @ 4.6 gpm/ft<sup>2</sup> = 0.288 mgd

High Lift Pumps - one 2.0 gpm @ 122'  
one 2.7 gpm @ 287'

### SCREENING

Chamber size: 15' x 5' x 14' (water depth)

Screens: Two 5' x 11'

### CHLORINATION

One Fischer & Porter gas, into screen chamber 40 lb/day

### FILTRATION

Type: Anthafilt gravity filter

Size: Two 25' x 25'

Rate: 1.6 gpm/ft<sup>2</sup> @ 288,000 gpd

Backwash: 6500 gpm

### STORAGE

Reservoir - 200,000 gal

Elevated Tank - 125,000 gal

# '69 REVIEW

## GENERAL

There were no major problems during 1969 and the plant operated at the same efficiency as in the previous year. The quality of the raw water was fair, and the rapid sand filters removed approximately 50% of the turbidity.

Water consumption was up slightly from 327.8 million gallons in 1968 to 338.6 million gallons in 1969.

The filtration plant is operated by the Meaford Public Utilities Commission.

## EXPENDITURES

During 1969, 338.6 million gallons of water were treated at a total operating cost of \$19,893.96. The unit cost of water treated was 18 cents per 1,000 gallons.

## FLOWS

The total flow for the year was 338.6 million gallons. The average daily flow was 0.93 million gallons, while the maximum and minimum daily flows were 1.52 and 0.61 million gallons.

Due to the slight increase in consumption, the probability of occurrence graph indicated that 24% of the time the flow was greater than one mgd.

#### CHLORINATION and DISINFECTION

A total of 3465 pounds of chlorine was used during 1969. Post-chlorination was employed, with an average dosage of 1.0 milligrams per litre.

From an average of four monthly raw water samples and 12 monthly treated water samples, it was determined that although the average density of coliforms in the water was 234 per 100 ml, the average density in the treated water was zero.

#### WATER QUALITY

From the graphs it can be seen that turbidity averaged approximately 1.5 JTU during the year, with a sharp rise during the last two months. The probability of occurrence graph indicates that turbidity is greater than 2 JTU only four percent of the time.

### **CONCLUSIONS**

At the end of 1969, the reserve fund stood at close to \$35,000.

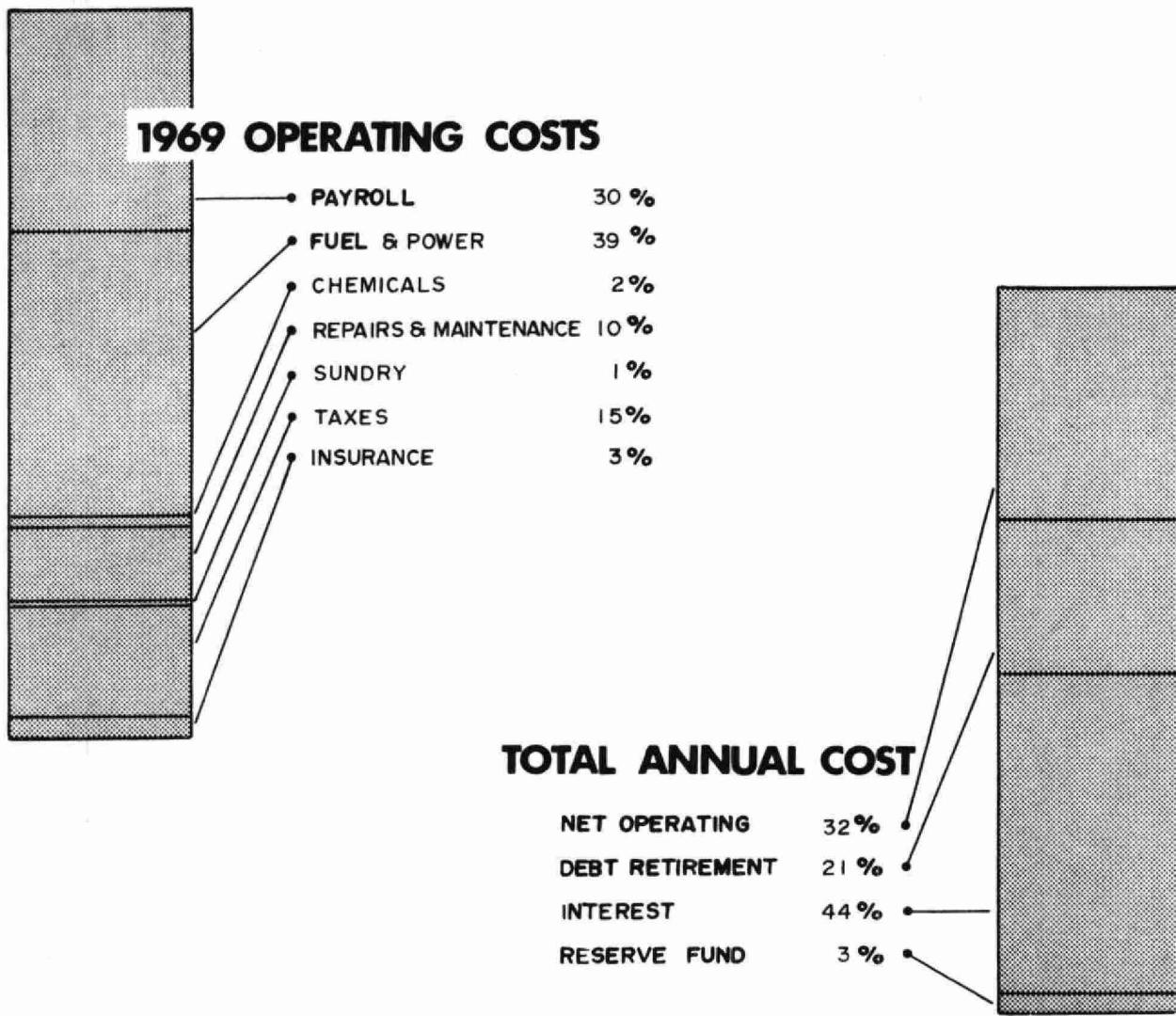
Due to the gradual yearly increase in demand, consideration should be given to increasing the capacity of the electrically-driven pumping unit, either by replacement or by increasing the capacity of the existing unit.

## PROJECT COSTS

NET CAPITAL COST (Final)	
Long Term Debt to OWRC	<u>\$483,129.09</u>
Debt Retirement Balance at Credit	
(Sinking Fund) December 31, 1969	<u>\$148,310.88</u>
Net Operating	\$ 19,893.96
Debt Retirement	12,822.00
Reserve	2,008.53
Interest Charged	<u>27,047.91</u>
TOTAL	<u>\$ 61,772.40</u>

## RESERVE ACCOUNT

Balance @ January 1, 1969	\$ 31,013.06
Deposited by Municipality	2,008.53
Interest Earned	<u>1,807.47</u>
	\$ 34,829.06
Less Expenditures	—
Balance @ December 31, 1969	<u>\$ 34,829.06</u>



### Yearly Operating Costs

YEAR	MILLION GALLONS TREATED	TOTAL OPERATING COSTS	COST PER THOUSAND GALLONS
1965	417.641	\$12,915.00	\$0.03
1966	416.746	14,171.63	0.03
1967	302.046	14,720.93	0.05
1968	327.840	16,574.84	0.05
1969	338.6	19,893.96	0.06

## Monthly Operating Costs

MONTH	TOTAL	PAYROLL	FUEL and POWER	CHEMICALS	REPAIRS and MAINTENANCE	SUNDRY	TAXES	INSURANCE
JAN	1547.69	305.69	556.99	-	685.01	-	-	-
FEB	-	-	-	-	-	-	-	-
MAR	1065.48	607.23	583.95	(220.00)	-	94.30	-	-
APR	1226.48	518.02	663.58	-	41.20	3.68	-	-
MAY	1247.84	289.67	693.80	124.88	72.18	67.31	-	-
JUNE	1502.86	358.56	634.66	-	333.17	3.59	-	172.88
JULY	2466.39	813.84	1168.41	124.88	324.80	34.46	-	-
AUG	1.62	-	-	-	-	1.62	-	-
SEPT	4641.51	1007.55	1693.28	124.88	330.61	1.51	1483.68	-
OCT	2317.40	289.74	544.56	-	-	4.10	1479.00	-
NOV	30.00	-	-	-	-	-	-	30.00
DEC	3846.69	1858.25	1189.43	124.88	214.54	25.38	-	434.21
<b>TOTAL</b>	<b>19893.96</b>	<b>6048.55</b>	<b>7728.66</b>	<b>279.52</b>	<b>2001.51</b>	<b>235.95</b>	<b>2962.68</b>	<b>637.09</b>

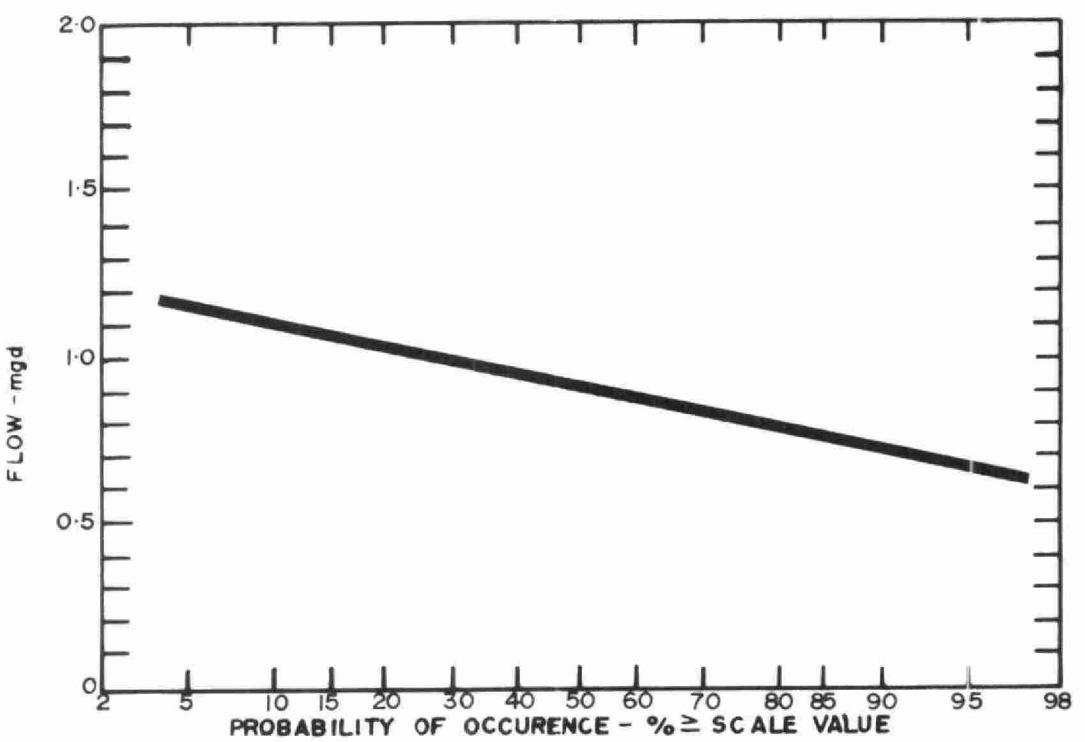
BRAKETS INDICATE CREDIT

Note: Expenditures in July included one invoice for \$1118.88 dated September, 1968.

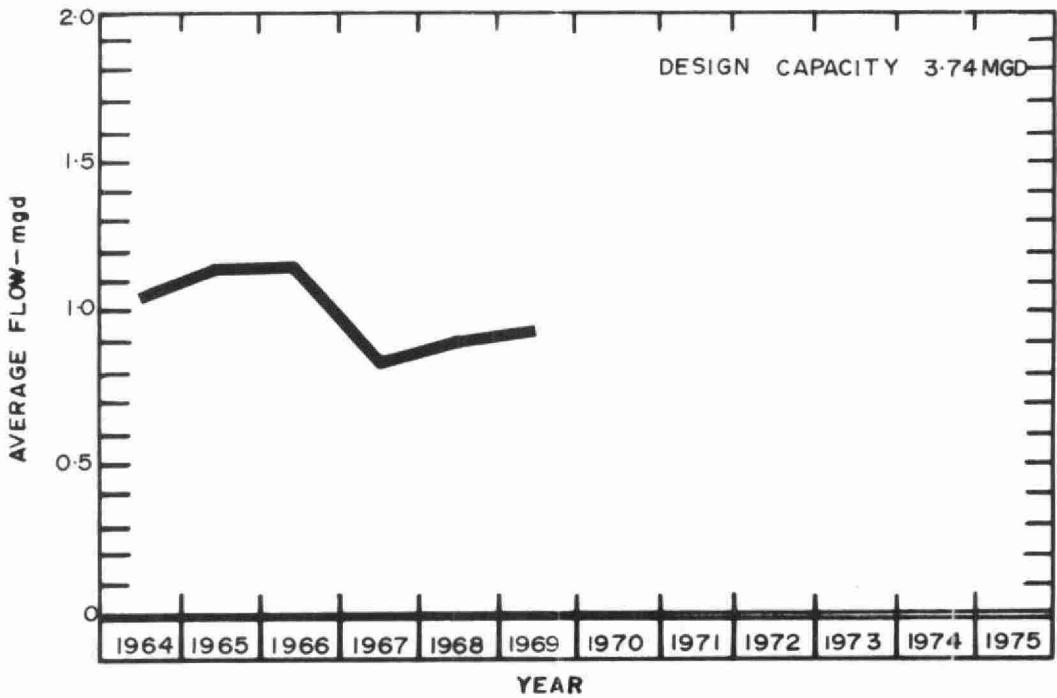
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**PROCESS DATA**

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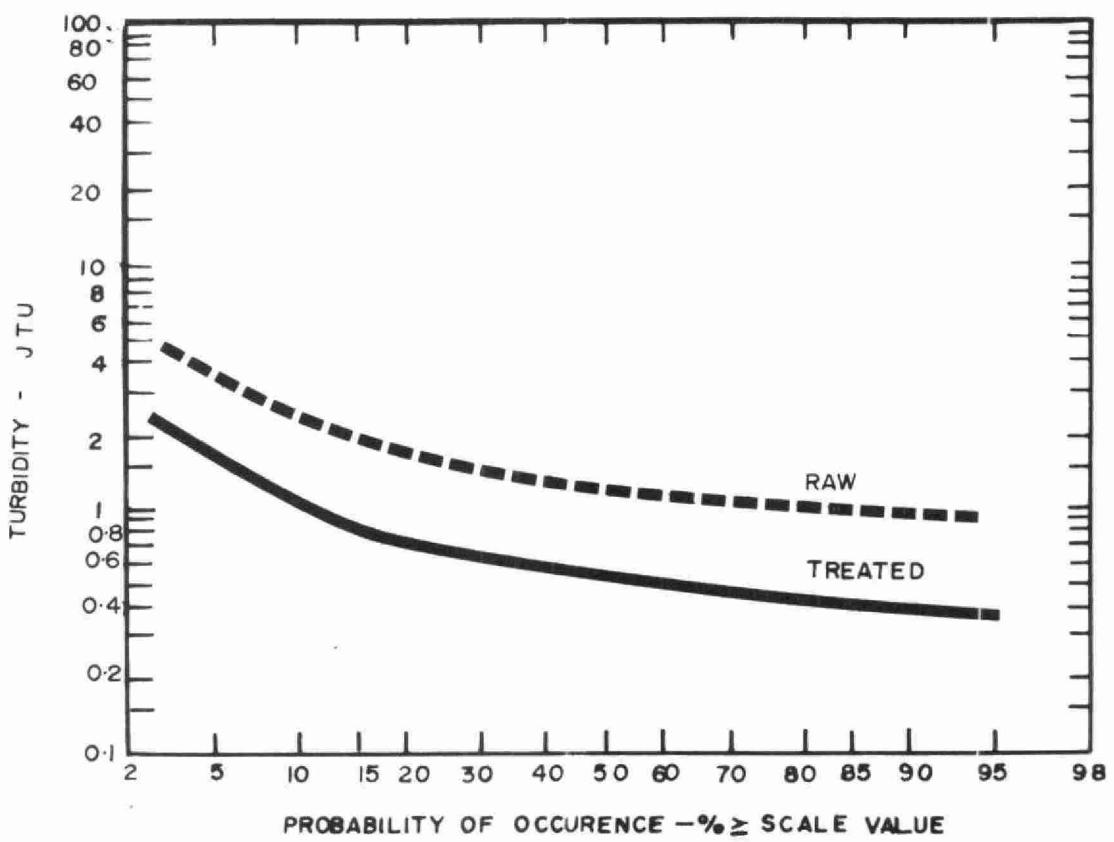


## F L O W S

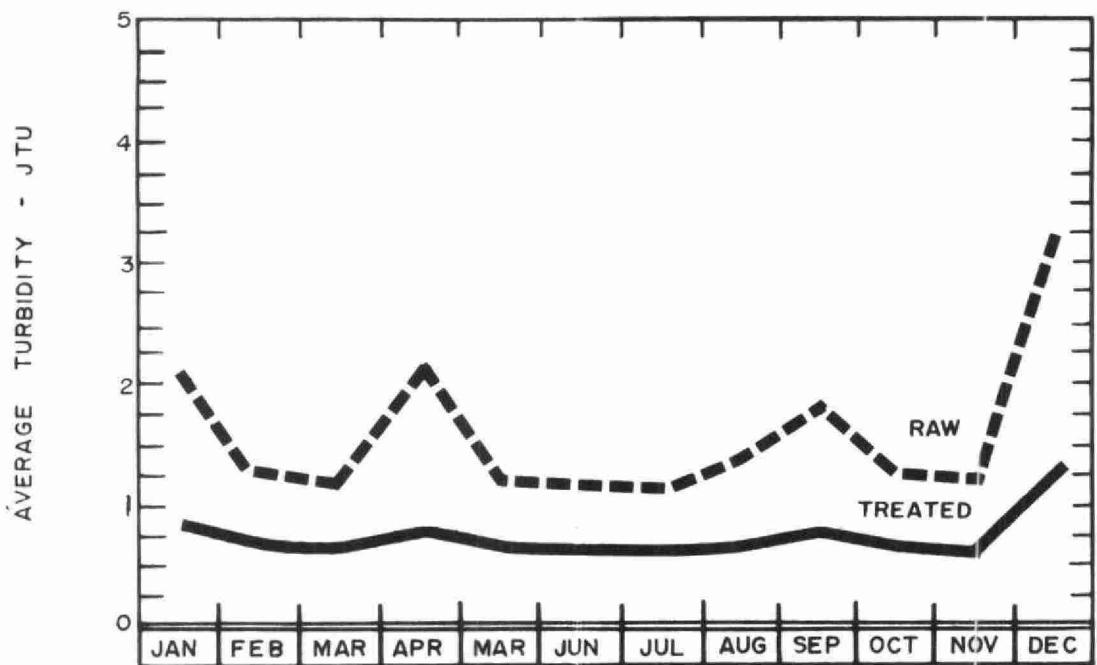


## PLANT FLOWS

MONTH	TOTAL FLOW mil gal	AVERAGE DAILY FLOW mil gal	MAXIMUM DAILY FLOW mil gal	MINIMUM DAILY FLOW mil gal
JAN	27.49	0.89	1.02	0.63
FEB	24.97	0.89	0.99	0.68
MAR	28.12	0.91	1.02	0.67
APR	26.67	0.89	1.01	0.63
MAY	28.06	0.91	1.02	0.66
JUNE	28.55	0.95	1.28	0.69
JULY	34.82	1.12	1.52	0.77
AUG	29.33	0.95	1.38	0.63
SEPT	28.89	0.96	1.18	0.71
OCT	29.44	0.95	1.08	0.74
NOV	27.01	0.90	1.05	0.63
DEC	25.25	0.81	0.97	0.61
TOTAL	338.60	-	-	-
AVERAGE	28.22	0.93	-	-



## TURBIDITY



## CHLORINATION and DISINFECTION

MONTH	COLIFORM				CHLORINATION	
	RAW WATER		TREATED WATER		CHLORINE USED pounds	CHLORINE DOSAGE mg/l
	NUMBER OF SAMPLES TAKEN	AVERAGE DENSITY No./100 ml	NUMBER OF SAMPLES TAKEN	NUMBER WITH COLIFORMS > 0/100 ml		
JAN	4	> 47	12	0	270	1.0
FEB	4	55	11	0	242	1.0
MAR	5	> 22	14	0	263	0.9
APR	4	> 2	12	0	257	1.0
MAY	4	> 6	12	0	280	1.0
JUNE	4	225	12	0	291	1.0
JULY	5	43	15	0	362	1.0
AUG	4	326	12	0	318	1.1
SEPT	5	133	15	0	313	1.1
OCT	4	370	11	0	323	1.1
NOV	3	1575	9	0	288	1.1
DEC	3	3	9	0	258	1.0
TOTAL	-	-	-	-	3465	-
AVERAGE	4	234	12	0	289	1.0

Date Due

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Ontario Water Resources Co  
Meadford water  
treatment plant : 1969 anmx  
operating summary c.1. a aa



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